

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A data product that can be read into a computer or a map data processing apparatus and contains map data that includes map-related information related to a map, the map data comprising:

a structure achieved by dividing the map into a plurality of mesh-like subdivisions and dividing the map-related information into units corresponding to the individual subdivisions; and

a structure in which the map-related information is managed in units of subdivision sets each containing a plurality of adjacent subdivisions and the map-related information is used in the map data processing apparatus in units of the individual subdivision sets.

2. (Original) A data product according to claim 1, wherein:

the subdivision sets are each constituted with a core portion having at least one subdivision that does not overlap with another subdivision set and an overlap portion having at least one subdivision that is part of a core portion of another subdivision set.

3. (Currently Amended) A data product according to ~~claim 1 or claim 2~~, wherein:

the map-related information corresponding to the overlap portion is generated by reducing the map-related information corresponding to the core portion of the other subdivision set.

4. (Currently Amended) A data product according to ~~any of claims claim 1 through 3~~, wherein:

the map-related information corresponding to each of the subdivision sets is continuously recorded on a recording medium as a single block of information.

5. (Currently Amended) A data product according to ~~any of claims~~ claim 1 ~~through 4~~, wherein:

the map-related information adopts a structure that allows the map-related information to be used in the map data processing apparatus also in units of the individual subdivisions.

6. (Currently Amended) A data product according to ~~any of claims~~ claim 1 ~~through 5~~, the map data further comprising:

a structure that contains management information used to manage the map-related information in units of the subdivision sets, wherein:

the map-related information obtained by the map data processing apparatus can be updated in units of the subdivision sets by using the management information.

7. (Currently Amended) A data product according to ~~any of claims~~ claim 1 ~~through 6~~, wherein:

the map-related information is route-related information related to routes on the map used for route calculation.

8. (Original) A data product according to claim 3, wherein:

the map-related information is route-related information related to routes on the map used for route calculation;

intersection points of roads are designated as nodes;

the route-related information comprises sets of subject node information each corresponding to one of a plurality of nodes present on each road and sets of adjacent node information corresponding to nodes connecting with individual subject nodes;

the route-related information corresponding to the core portion comprises the subject node information and the adjacent node information; and

the map route-related information corresponding to the overlap portion is generated by eliminating the adjacent node information corresponding to specific nodes from the map route-related information corresponding to the core portion.

9. (Original) A data product that can be read into a computer or a map data processing apparatus and contains map data that includes map-related information related to a map, the map data comprising:

a structure achieved by dividing the map into a plurality of mesh-like subdivisions and dividing the map-related information into units corresponding to the individual subdivisions; and

a structure in which the map-related information is managed in units of subdivision sets each containing a plurality of adjacent subdivisions and the map-related information is used in the map data processing apparatus in units of the individual subdivision sets, wherein:

the subdivision sets are each constituted with a first subdivision and at least one subdivision adjacent to the first subdivision;

map-related information corresponding to the first subdivision comprises the map-related information having been divided; and

map-related information corresponding to the subdivision adjacent to the first subdivision comprises information generated by reducing the map-related information having been divided.

10. (Currently Amended) A data product according to ~~any of claims~~ claim 1 through ~~6 and 9~~, embodied as a recording medium having recorded therein the map data.

11. (Currently Amended) A data product according to claim 7-~~or~~-8, embodied as a recording medium having recorded therein the map data.

12. (Currently Amended) A map data processing apparatus comprising;
a recording medium drive unit at which a recording medium embodying a data product according to claim 10 ~~or~~ 11 is loaded; and

a processing unit that executes map data processing based upon the map data recorded in the recording medium.

13. (Original) A map data processing apparatus comprising;
a recording medium drive unit at which a recording medium embodying a data product according to claim 11 is loaded; and
a processing unit that executes a route calculation based upon the route-related information recorded in the recording medium.

14. (Original) A data product that can be read into a computer or a map data processing apparatus and contains map data that includes map-related information related to a map, the map data comprising:

a structure in which the map-related information is provided at a plurality of levels each corresponding to one of various scaling factors;

a structure achieved by dividing the map into a plurality of mesh-like subdivisions and dividing the map-related information divided into units corresponding to the individual subdivisions, at each level;

a structure in which the map-related information is managed in units of subdivision sets each containing a plurality of adjacent subdivisions and the map-related information is used in the map data processing apparatus in units of the individual subdivision sets; and

a structure in which management tables containing information used to manage the subdivision sets at the individual levels are provided, wherein:

the management tables contain information used in an arithmetic operation executed to determine correspondence between subdivision sets at different levels.

15. (Original) A data product according to claim 14, wherein:
the management tables each contain information indicating a position of a reference subdivision representing a given subdivision set in combination with information related to a quantity of subdivisions contained in the subdivision set

along a vertical direction and information related to a quantity of subdivisions contained in the subdivision set along the horizontal direction.

16. (Original) A data product according to claim 15, wherein:
the subdivision set has a rectangular shape; and
the reference subdivision representing the subdivision set is a subdivision located at a lower left position in the subdivision set.
17. (Original) A data product according to claim 16, wherein:
sets of the information used to manage the subdivision sets are stored sequentially in an order corresponding to a positional arrangement of reference subdivisions representing the individual subdivision sets in reference to the horizontal direction and the vertical direction along which the map is divided.
18. (Currently Amended) A data product according to ~~any of claims-claim 14 through 17~~, wherein:
the map is divided into a plurality of mesh-like blocks at each of the levels;
the plurality of subdivisions are subdivisions obtained by further dividing each of the blocks into smaller partitions; and
the management tables are provided each in correspondence to one of the blocks.
19. (Currently Amended) A data product according to ~~any of claims-claim 14-through 18~~, wherein:
the map-related information obtained by the map data processing apparatus can be updated in units of the individual subdivision sets by using the management tables.
20. (Currently Amended) A data product according to ~~any of claims-claim 14-through 19~~, wherein:
intersection points of roads on the map are designated as nodes;
the map-related information contains information related to the nodes;

the map-related information divided in correspondence to each subdivision unit further contains different level node correspondence information indicating correspondence between nodes in the subdivision and corresponding nodes at another level; and

the correspondence between nodes at different levels can be ascertained based upon correspondence between the subdivision set and a subdivision set at the other level and the different level node correspondence information for subdivisions constituting the subdivision set.

21-25. (cancelled)